

BIODIVERSITY CONNECTOR

Executive Director of the National Environmental Education and Natural History Museum, Thomas D. Smith, comments on the report.

Ground

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BIODIVERSITY CONNECTOR

*An Information Bulletin about the Natural Heritage Information Centre:
A Joint Project of Alberta Natural Resources Services and Parks Canada*

ISSUE 2
FALL 1995

BACKGROUND

Welcome to the second issue of *Biodiversity Connector*. In this issue, we'll fill you in on what we've done since last fall.

For those who missed the first issue and are wondering what the Centre is about, it's an interagency effort to compile information about uncommon plant and animal species, and plant communities and other heritage information to help identify priorities for heritage protection in Alberta. Initially, our efforts have concentrated on the mountain and foothills, and the area around Elk Island. The information is placed in manual and computer files based on the system used by Conservation Data Centres operated by most provinces and states in North America.

It, after reading this issue, you would like to be placed on our mailing list, please contact us at the address listed at the end of the newsletter.

SO.. WHAT HAVE WE DONE

Although we have only been working on the system since last October, we have managed to cover a significant amount of ground. This is largely due to the excellent co-operation we received from university researchers, experts from several federal and provincial agencies, and consultants (Table 1).

"Of the 26 vascular plants ranked S1 to S3 in Elk Island National Park, 5 are aquatic species, 13 are associated with wetlands, and 8 are associated with forests (G. Griffiths)."

During the early winter months, Alberta Parks set up a number of

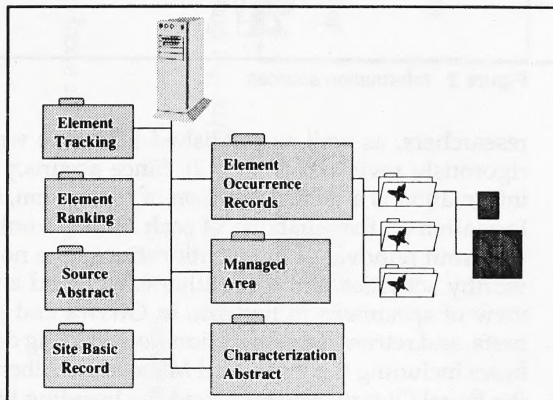


Figure 1 The information system

Paradox files for the new system and mapped areas managed by national and provincial conservation agencies. We now have seven files to work with (Figure 1). Taxonomic information is kept in an Element Tracking (ET) File, ranking information (see below for a description of ranking procedures) is maintained in an Element Ranking (ER) File, data related to each occurrence of a tracked species or community are kept in an Element Occurrence (EO) File, life history information is stored in an Characterization Abstract (CA) File, ownership information for managed areas is stored in a Managed Area (MA) File, tracks of land or sites of interest (e.g. Beaverhills moraine) are described in a Site Basic Record (SBR) File, while information source references are kept in a Source Abstract (SA) File and a Contacts (C) File. These files are linked, allowing access to information in any file by selected fields.

As mentioned, Parks Canada and Rocky Clearwater Forest issued contracts to a number of consultants last winter to collate data on a range of uncommon life forms. Collections from museums and universities, data stored in government and private data bases, field notes of naturalists and

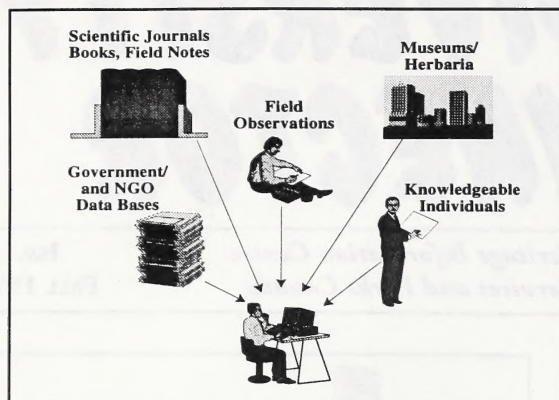


Figure 2 Information sources

researchers, as well as published literature were rigorously reviewed (Figure 2). Since accuracy of information is a critical function of the system, information on the reliability of each record is noted to permit removal of misidentifications. The noteworthy activities of the consultants included a review of specimens in herbaria in Ottawa and Alberta, and retrieving information from existing data bases including the Provincial Museum of Alberta, the Royal Ontario Museum, and the breeding bird

surveys of the Federation of Alberta Naturalists.

Staff from provincial and federal agencies helped in a number of ways. These include Lorne Fitch, Harry Stelfox, Steve Brechtel, Darrell Smith, Dave Poll and Percy Wiebe. Staff from data centres in Montana, Ontario, Saskatchewan and BC generously provided technical advice and assistance. Their help has been instrumental in moving our system forward.

HOW IS A TRACKING LIST DEVELOPED?

The ANHIC tracks elements of native biodiversity that are relatively uncommon. To do this, elements are evaluated and ranked on their global and province-wide status using criteria developed by The Nature Conservancy (TNC); the system used by all CDCs in North America. Ranking is primarily based on the number of occurrences reported; although popu-

"Edmonton is home to 26 species of mosquitoes! An additional 12 species are found nearby in central Alberta (C. Saunders)."

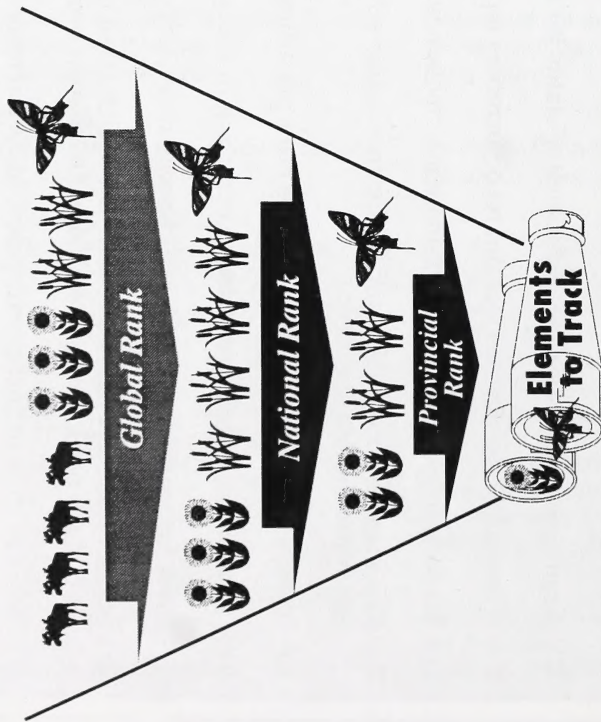
Table 1 Consultants and Contributors in the first year of the ANHIC

VASCULAR PLANTS	
MOUNTAIN AND FOOTHILL NATURAL REGIONS	<i>Cottonwood Consultants and the B.C. Conservation Data Centre Graham Griffiths Patsy Cotterill</i>
ELK ISLAND AND ENVIRONS	
ROCKY-CLEARWATER FOREST	
VERTEBRATES	
MOUNTAIN AND FOOTHILL NATURAL REGIONS	<i>Sweetgrass Consultants Deirdre Griffiths</i>
ELK ISLAND AND ENVIRONS	
SELECTED INVERTEBRATES	
MOUNTAIN AND FOOTHILL NATURAL REGIONS	<i>R.L. & L. Consultants with input from R.S. Anderson (crustaceans and rotifers), B. Miskimmin (crustaceans), H.F. Clifford, R. Koss and G. Scrimgeour (macro-invertebrates), G. Pritchard (dragonflies), A. P. Nimmo (caddisflies), D.A. Craig (true flies), R. Mutch (stoneflies), R. Casey (crustaceans and polychaetes), A. Paul (crustaceans and molluscs), J.L. and B.F. Carr (beetles) and I.R. Ball (insects).</i>
ELK ISLAND AND ENVIRONS	<i>Jim Ryan with input from D. Smith (leeches), J. van Es (molluscs), G.O. Stoyke (dragonflies and damselflies), G.H. Hilchie (aquatic insects), A. Nimmo (caddisflies), and C. Saunders (mosquitoes).</i>
NON-VASCULAR PLANTS	
MOSSES IN ALBERTA	<i>Ross Priddle with assistance from R. Belland, D. Vitt, R.Hastings and D. Johnson. Bernard Goffinet with assistance from R. Belland and D. Vitt.</i>
MACRO-LICHENS IN ALBERTA	

A NUMBER OF OTHER CODES ARE USED TO CLARIFY THE STATUS OF AN ELEMENT

- A** - Accidental or casual in the province, includes species (usually birds or butterflies) recorded very infrequently, commonly far outside their usual range.
- B** - A rank modifier indicating breeding status for a migratory species.
- C** - Element is presently extant in the province only in captivity or cultivation.
- E** - Exotic species established in province, may be native to nearby regions.
- H** - Historically known, may be relocated in future.
- HYB** - Hybrid of species.
- N** - A rank modifier indicating non-breeding status for a migratory species.
- P** - Potentially exists in province but no occurrences reported.
- Q** - Taxonomic problems involved, more information needed.
- R** - Reported for Alberta but lacking documentation which would provide a basis for either accepting or rejecting the report (e.g. misidentified specimen).
- RF** - Falsely reported for Alberta but this error persisting in the literature.
- SYN** - Synonym; element reported as occurring in Alberta, but province does not recognize the taxon.
- T** - Rank for a subspecific taxon (subspecies or variety).
- U** - Status uncertain often because of low search effort or cryptic nature of the element, possibly in peril, unrankable, more information needed.
- X** - Believed to be extinct or extirpated, historical records only.
- Z** - Ranking not applicable (e.g. migrants only).
- ?** - Not yet ranked in Alberta or rank tentatively assigned.

*"Recent samples of groundwater
in wells west of Calgary contained
a new genus of Diptera,
4 undescribed species of an
eyeless subterranean crustacean
and an undescribed species
of subterranean polychaete
(R. Casey)."*



"There are 65 aquatic species of molluscs in Alberta (J. van Es), however, there are 500 to 600 species of caddisflies in Alberta (A. Nimmo)."

"There are 26 species of leeches known from Alberta — of these 12 are likely to occur in Elk Island National Park."

EXPLANATION OF PROVINCIAL RANK CODES

RANK	STATUS	FREQUENCY/ DISTRIBUTION	CONCERNS/ COMMENTS
S1	Extremely Rare	5 or fewer occurrences in Alberta or only a few remaining individuals	May be especially vulnerable to extirpation because of some factor of its biology
S2	Very Rare	6-20 or fewer occurrences in Alberta or with many individuals in fewer occurrences	May be susceptible to extirpation because of some factor of its biology
S3	Rare - Uncommon	21-100 occurrences, may be rare and local throughout its Alberta, or in a restricted provincial range (may be abundant in some locations)	May be susceptible to extirpation because of large scale disturbances
S4	Common	Typically >100 occurrences	Apparently secure
S5	Very Common	Typically >100 occurrences	Demonstrably secure

lation size and trend, life history and reproductive strategies, and current threats are used when available.

A scale of 1 (critically imperiled) to 5 (demonstrably secure) is used to rank elements. An element can be uncommon everywhere (i.e. global scale) but more common provincially. Therefore, a global rank (G-rank) is first applied for each species across its entire range and then each province or state applies an S-rank. A tracking list is a short listing of elements ranked S1 and S2 and, if justified, S3.

"The earliest collections of mosses in the mountains and foothills of Alberta were made (by Drummond in 1825-1827) in the area called Jasper House."

of experts in those fields. We are now reviewing the lists and preparing them for publication. Once the lists have been established, they will be available to a wider group of experts for review and comment. Remember though, tracking lists are "fluid" and are updated regularly to reflect the most accurate information.

SO... WHERE ARE WE AT?

Although we obtained over 7,000 elements occurrence records for elements on the tracking lists, we have only just scratched the surface. Fortunately, we have received budget approval for a second year and we'll continue to organize and compile information on the biodiversity of Alberta. Additional projects will focus on development of provincial tracking lists and communicating the results through Internet, publications, and workshops.

SO... WHAT DOES THIS ALL MEAN?

Typically, elements of high priority for conservation are rare, endemic, disjunct, in peril or are special in some other way.

As of April 1995, we are tracking:

ALBERTA	RANK	# OF ELEMENTS
Mosses	S1	107
	S2	108
	S3	12
<i>MOUNTAINS AND FOOTHILLS</i> Vascular plants Vertebrates	S1	123
	S2	167
	S3	15
	S1	6
	S2	10
	S3	15
<i>ROCKY - CLEARWATER FOREST</i> Vascular Plants	S1	11
	S2	52
	S3	3
<i>ELK ISLAND AND ENVIRONS</i> Vascular Plants Vertebrates	S1	5
	S2	16
	S3	5
	S1	4
	S2	7
	S3	20

So far, we have developed preliminary tracking lists for a variety of groups with the assistance

HOW TO CONTACT US?

If you would like to:

- be placed on our mailing list for the *Biodiversity Connector*,
- obtain a copy of our tracking lists, contribute to the development of *Biodiversity Connector* or,
- simply want more information;

Contact:

John Rintoul or Joyce Gould

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(403) 427-5980 - fax

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Gavin More

Parks Canada

(403) 292-4496

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Write to us at:

Alberta Natural Heritage Information Centre

Alberta Environmental Protection

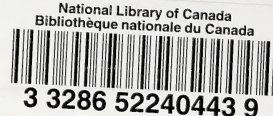
Parks Management Support Division

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IN THIS ISSUE:

RANKING ELEMENTS

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